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NOTICE OF ALLOWANCE AND FEE(S) DUE

5073 7590 06/16/2008

BAKER BOTTS L.L.P.
2001 ROSS AVENUE
SUITE 600
DALLAS, TX 75201-2980

EXAMINER

CORRIELUS, JEAN M

ART UNIT

PAPER NUMBER

2162

DATE MAILED: 06/16/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/844,043

04/27/2001

Richard Hans Harvey

063170.6290

2690

TITLE OF INVENTION: SYSTEM AND METHOD OF OPERATING A DATABASE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$0	\$1400	\$1440	09/16/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/844,043	04/27/2001	Richard Hans Harvey	063170.6290	2690

TITLE OF INVENTION: SYSTEM AND METHOD OF OPERATING A DATABASE

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nonprovisional	NO	\$1440	\$0	\$1400	\$1440	09/16/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
CORRIELUS, JEAN M	2162	707-104100

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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DATE MAILED: 06/16/2008

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

09/844,043

Examiner

Jean M. Corrielus

Applicant(s)

HARVEY, RICHARD HANS

Art Unit

2162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on May 21, 2008.
2. ☒ The allowed claim(s) is/are 1, 4-9, 12-17, 20-22, 24-28 and 31-36 renumbered as 1-27.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 5/21/08
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date ____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

/Jean M Corrielus/
Primary Examiner, Art Unit 2162

DETAILED ACTION

1. This office action is in response to the amendment filed May 21, 2008, in which claims 1, 4-9, 12-17, 20-22, 24-28 and 31-36 are presented for further examination.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114.

Applicant's submission filed on May 21, 2008 has been entered.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Chad D. Terrell (Reg. No. 52,279 on June 3, 2008).

The application has been amended as follows:

In the Claims:

1. (Currently Amended) A method of processing a database service query, comprising:

receiving a service query, the service query comprising a filter that comprises one or more filter items;

expanding the filter of the service query;

applying a condition test to each filter item of the expanded filter, the condition test comprising:

determining if the filter item comprises a NOT connective; and

determining if the filter item comprises one of a type only filter item or a type and value filter item; and

if a determination is made that the filter item comprises a NOT connective and a type only filter item, applying a logical methodology to evaluate the filter item, the logical methodology comprising expanding an expression of the filter item so that the filter item does not comprise the NOT connective.

9. (Currently Amended) A directory services arrangement comprising:

a plurality of tables, each table comprising a plurality of rows and columns, operable to store arbitrary data in a search service, at least one of the tables comprising information for resolving filters that comprise at least one filter item;

means for expanding each filter into an expanded term;

condition test means operable to determine:

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whether each filter item comprises a NOT connective; and

whether each filter item comprises one of a type only filter item or a type and value filter item; and

means for applying, if a determination is made that the filter item comprises a NOT connective and a type only filter item, a logical methodology to evaluate the filter item, the logical methodology comprising expanding an expression of the filter item so that the filter item does not comprise the NOT connective.

16. (Currently Amended) The directory services arrangement as claimed in Claim 9, wherein the condition test means is further operable to: determine if each filter pre-evaluates to true, ~~but is~~ and inverted by a NOT connective; and if the determination is made that the each filter pre-evaluates to true and inverted by a NOT connective ignore ~~such that the expanded term if is~~ ignored.

17. (Currently Amended) A method of processing a database service query, comprising:

receiving a service query;

applying a filter to the service query resulting in zero or more filter items;

applying, if one or more filter items results, a condition test to each filter item to determine whether the filter item comprises one of a type only filter item or a type and value filter item; and

if a determination is made that the filter item comprises a NOT connective and a type only filter item, applying a logical methodology to evaluate the filter item, the logical methodology

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comprising expanding an expression of the filter item so that the filter item does not comprise the NOT connective.

24. (Currently Amended) The method as claimed in Claim 17, comprising, ~~adding~~ if the filter item is a type and value filter item, adding a SQL representing the filter item to an expression to be evaluated, ~~the adding comprising~~ by performing at least one table join.

28. (Currently amended) A directory services arrangement comprising:

One or more memory modules operable to store a plurality of tables, each table comprising a plurality of rows and columns, operable to store arbitrary data, at least one of the tables comprising information for resolving filters that comprise at least one filter item in a search service; and

One or more processing unit units operable to:

execute a condition tester operable to determine:

whether each filter item comprises a NOT connective; and

whether each filter item comprises a type only filter item or a type and value filter item; and

apply, if a determination is made that the filter item comprises a NOT connective and a type only filter item, a logical methodology to evaluate the filter item, the logical methodology comprising expanding an expression of the filter item so that the filter item does not comprise the NOT connective.

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32. (Currently Amended) The directory services arrangement as claimed in Claim 28, wherein, if determined that the filter item comprises a NOT connective and a type and value filter item, a NOT connective associated with ~~a~~ the type and value filter item is pushed inside the filter item resulting in changing an operator inside the filter item.

35. (Currently Amended) The directory services arrangement as claimed in Claim 28, wherein the condition test means is further operable to: determine if each filter pre-evaluates to true, ~~but~~ is and inverted by a NOT connective; and if the determination is made that the each filter pre-evaluates to true and inverted by a NOT connective ignore ~~such that~~ the expanded term ~~if is~~ ignored.

36. (Currently amended) ~~Software~~ A computer program for processing a database service query, the ~~software~~ program being embodied on a computer-readable medium and having instructions for causing a processor to perform operations, operations comprising:

- receiving a service query, the service query comprising a filter comprising one or more filter items;

- expanding the filter;

- applying a condition test to each filter item of the expanded filter, the condition test comprising:

- determining if the filter item comprises a NOT connective; and

- determining if the filter item comprises one of a type only filter item or a type and value filter item; and

a determination is made that the filter item comprises a NOT connective and a type only filter item, applying a logical methodology to evaluate the filter item, the logical methodology comprising expanding an expression of the filter item so that the filter item does not comprise the NOT connective.

Allowable Subject Matter

4. The present application has been thoroughly reviewed. Upon searching a variety of databases, the examiner respectfully submits that claims 1, 4-9, 12-17, 20-22, 25, 28 and 31-36 are allowable in light of the prior art made of record and in light of the applicant arguments.

Reason For Allowance

5. The following is an examiner's Statement of Reasons for Allowance: The present invention is directed to a logical methodology can also be used to evaluate the portion of the type and value filter item having a NOT connective, such logical methodology may be the a subtraction method or any other suitable methodology capable of expanding an expression so that the filter item does not contain NOT connectives, wherein a filter term $A.!B$ includes filter item $!B$ which is a type and value filter item: $A.!B$ expression, this filter term can be further expanded as: $A.(B^* - B) \Rightarrow A.B^* - A.B$, where B^* represents B present and is used to remove the entries where the filter item is undefined. In the filter term $A.!B$, the filter item $(!B)$ is a type and value filter item so that: $B + !B = 1$, which is relatively similar to expression $B^2 + !B^2 = 1$. The closest prior art, Corn (US Patent no. 6,356,892) discloses a similar system of hierarchical LDAP searching in an LDAP directory service having a relational database management system as a

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backing store by parsing an LDAP filter based query for elements and logical operators of the filter query. If the LDAP logical operator is OR, uses an SQL UNION to union the sets generated from subquery, if the LDAP logical is AND uses an SQL INTERCEPT to intercept the set generated from the subquery and if LDAP logical operator is NOT excludes entries by negating the IN operation before the subquery. However, Corn either singularly or in combination, fail to anticipate or render obvious the recited features “if a determination is made that the filter item comprises a NOT connective and a type only filter item, applying a logical methodology to evaluate the filter item, the logical methodology comprising expanding an expression of the filter item so that the filter item does not comprise the NOT connective”. These features, in conjunction with all other limitations of the dependents and independent claim renders claims 1, 4-9, 12-17, 20-22, 24-28 and 31-36 are allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance”.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean M Corrielus whose telephone number is (571) 272-4032. The examiner can normally be reached on 10 hours shift.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the

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organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jean M Corrielus/
Primary Examiner, Art Unit 2162

June 12, 2008